

Wirtschaftsuniversität Wien
Vienna University of Economics and Business Administration



Working Papers Series:

Growth and Employment in Europe: Sustainability and Competitiveness

Working Paper No. 18

**Multinational Enterprises and Their Domestic Counterparts: Past
Research, Current Issues and Future Directions**

Christian Bellak

November, 2001

This working paper series presents research results of the WU-Research Focus:
Growth and Employment in Europe, Sustainability and Competitiveness
The papers are available online under: <http://www.wu-wien.ac.at/inst/vw1/gee/workp.html>

Multinational Enterprises and Their Domestic Counterparts: Past Research, Current Issues and Future Directions

Author's note: This is a draft and subject to change

by

Christian Bellak

Vienna University of Economics and Business Administration (WU)

Department of Economics (VW IV)

Augasse 2-6

A-1090, Vienna, Austria

Tel.: ++43 1 31 336 - 4505

email: christian.bellak@wu-wien.ac.at

Abstract

This paper reviews and summarises the results of selected empirical studies on performance gaps between multinational enterprises and their domestic counterparts. Performance gaps arise in such fields as productivity, profitability, wages, skills, factor intensity and growth. Of central interest is the question to what extent is foreign ownership an explanatory factor of performance gaps? Empirical evidence supports the existence of performance gaps between foreign and domestic firms, yet foreign ownership is a much less important explanatory factor than normally assumed. Structural factors like industry, size and multi-nationality *per se* are more important. It is argued that such results are broadly consistent with those derived in the literatures on ownership change, on foreign entry and on spillovers. The concluding section discusses the normative issue whether there is a case for investment promotion policies to discriminate between firms on the basis of performance gaps by ownership.

Keywords

Foreign direct investment, multinationals, firm performance, foreign and domestic firms

JEL

F2; L1

I. Introduction

In one of the most influential books on Multinational Enterprises (MNEs), Buckley and Casson (1976, Tables 1.12 and 1.13) present comparisons of US-based MNEs with other firms in the same industry in eight countries by industries, divided into "research intensive" vs. "non-research-intensive" industries in 1970. Their comparison reveals that

- (a) in practically all US-industries, US-based MNEs undertake more R and D per unit of sales than do other firms in the same US industry;
- (b) in the majority of national industries, MNEs have a higher labour productivity than other firms;
- (c) MNEs employ a relatively high proportion of administrative personnel;
- (d) in 50 per cent of cases, US-based MNEs export a higher proportion of their output slightly below average than do other firms in research-intensive industries (and above average in non-research-intensive industries); and
- (e) in the UK manufacturing industry, foreign firms were generally more profitable than UK firms in the same industry (1965 and 1969).

Comparative research on groups of firms has been directed to a number of issues like size, competition (e.g. Nickell, 1996) and wages (e.g. Greenaway et al. 2000), productivity (e.g. Keay 2000, Diewert and Nakamura 1998, Hall and Jones 1999), exporting (e.g. Cohen 1973) and technology (e.g. Nelson 1991). An area, where substantial differences between firms are repeatedly reported in empirical studies, is the comparison of the *economic performance* of domestic-owned (DO) and foreign-owned (FO) firms. The superior performance of the former over that latter group would not surprise us in a comparison of a developed home and a developing (Willmore 1986) or transition host country, yet FO firms also reveal superior performance versus their counterparts in developed countries. The performance gaps were *inter alia* revealed in areas like productivity, wages, profitability, growth, market entry strategies, survival, labour relations, market shares, bankruptcy, exit, size, skill intensity, innovatory activities and advertising intensity. The revealed performance differences have been partly attributed to ownership, but also to structural factors like industry composition or size.

Descriptive analysis on performance gaps is particularly misleading, if there are a few large FO MNEs compared to a small and medium-sized domestic sector (e.g. Ireland). Descriptive evidence therefore has often wrongly convinced policy makers that they should support FO firms and has led to unnecessary distortions of allocation of resources.

For simplicity we denote as "domestic-owned firms" those majority-owned firms which are either purely domestic firms or multinationals. Affiliates of a parent company located in a foreign country are referred to as "foreign-owned firms" in subsequent sections.

The questions then are why such performance gaps between FO and DO firms exist theoretically and whether foreign ownership explains such gaps

empirically. The purpose of this article is to survey the vast literature that addresses one or more of the performance gaps and in particular how they are explained. It is based on a thorough analysis of selected articles based on citation frequency, partly directed by the need to include a broader range of countries and / or performance indicators. Also, a focus has been put on more recent studies.

Section II considers the importance of the issue by discussing current issues. In section III the main ownership-related arguments that explain performance gaps are assessed and section IV discusses structural explanations. Section V focuses on methodological issues. Empirical evidence is reviewed in section VI. Our survey concludes that the relevance of foreign ownership as a determinant of performance gaps is often overstated relative to structural factors and multi-nationality *per se* has been given too little attention in past research. Apart from such aspects as whether gaps exist and whether they can be attributed to foreign ownership, an important normative question is discussed in the concluding section VII: "Do performance gaps justify discriminatory subsidisation policies between FO and DO firms?"

II. Current Issues and Related Literature

What are the reasons for the continuous interest in the comparative performance of DO and FO firms?

Firstly, societies devote substantial resources in investment promotion, especially the attraction of FO firms. For example, transition economies, such as e.g. the Central- and East-European countries, expect to gain and catch-up due to a superior performance of the FO sector, spilling over to the DO sectors. Much of the recent literature has suggested the importance of FO firms for economic progress (productivity, technology) in host economies, besides direct technology transfer and diffusion or trade. (Keller, 2000) Considerable part of the benefits that might accrue to host countries or host-country firms are rooted in the believe of a systematic superior performance of FO firms compared to DO firms. If this were the case, it would have important normative implications for investment promotion policies, since there are significant costs associated with "marketing a country". Are countries with a larger share of FO firms better off, because these plants operate more efficiently than domestic plants, thus generating social gains? Should countries promote FDI (see e.g. Hanson 2001) based on externalities from a superior performance of FO firms? Part of empirical evidence emerging on negative spillovers (e.g. Chung et al. 1996) casts doubt on such issues. Is it a viable view to believe that

increasing the share of FO firms will raise average performance of the total economy?¹

Secondly, the upsurge of international mergers and acquisitions has led to substantial increases of the share of FO firms in the total population of firms of countries, both in manufacturing and in services. At the same time when new issues of comparison emerge, the globalisation process has led to a situation where the majority of firms is multi-national in scope, with few exceptions of locally segmented markets (e.g. some services like haircutting). Yet, the side effect is that the increasingly globalised ownership structure of firms (Brainard 1993; Berle and Means 1932, LaPorta et al. 1999) makes it almost impossible to attribute a certain country of (ultimate) ownership to a firm.

Thirdly, international competitiveness is another subject where the need to separate these two groups of firms is increasingly recognised in comparisons of countries and industries.

Fourthly, there is a genuine economic interest in the efficiency of different firm organisations, such as organisational hierarchies or systems of corporate governance (anglo-american vs. continental).

Fifthly, comparisons between firms or groups of firms raise a number of important and difficult-to-overcome methodological issues, also frequently found in international comparisons in various other fields of economic analysis.

The existence of performance gaps can be linked to three strands of literature.

(a) Spillovers from FO to DO firms: Spillovers may occur, if one group of firms (here: the FO firms) has some "superior asset" over another group of firms (here: the DO firms), the latter benefiting through learning, adaptation, worker mobility etc. from the former. Evidence on the existence and magnitude of spillovers (e.g. Blomström and Kokko, 1998) suggests that if they are significant at all, their impact is rather small. Some studies (e.g. Aitken and Harrison 1999) reveal positive spillovers within the foreign sector and negative ones to the domestic sector. Again, controlling for industry, size and a number of other factors reduces the ownership effect in many cases. Aitken et al. (1996, p. 363) discuss the relationship between spillovers and gaps. (see also Blomström and Sjöholm, 1999).

The larger the former, the lower should be the dispersion of the performance. Haddad and Harrison (1993, p. 53) find that FO firms have higher levels of productivity, but their rate of productivity growth is lower than for DO firms. Rather than suggesting a catch-up process, they conclude that DO firms do not have higher productivity growth in sectors with a larger foreign presence (see also Aitken et al. 1997a). The size of the gaps is thus one determinant for the likelihood of spillovers to occur between FO and DO firms.

¹ We exclude aspects whether this is desirable from a policy point of view, where it is often argued that a higher level of foreign ownership reduces room for policy options of the host country, since production decisions are taken abroad.

To date, it is not known, whether negative spillovers are a major source of performance gaps, yet this is certainly worth exploring. The mere fact that negative spillovers may exist between FO and DO firms does not, however, imply, that levels of productivity must be lower in the latter group of firms in the short run but could lead to such a situation in the long run.

(b) Studies on the effect of ownership changes: The mergers and acquisitions are closely related to the issue of performance differences between DO and FO firms. Since the empirical literature in this field hardly touches the question of foreign vs. domestic ownership, we only briefly mention some studies here. Two contrasting approaches are used: One is the disciplining effect of a take-over on the management, whereby the take-over is stimulated by decreasing share-prices. Favourable post-acquisition performance raises the value of the firm. The substantial transaction costs incurred in a take-over may, however, limit efficiency gains. The other approach is to view take-overs as a result of managerial decisions for growth of the firm with efficiency considerations often being of a secondary nature. Time-series or panel analyses have to account for the possibility of ownership change. A similar question related to productivity gaps is raised in the literature on acquisitions, namely whether high-productivity properties are more likely to be overtaken and how they perform after acquisition. McGuckin and Nguyen (1995) show that high-productivity plants (in the U.S. food industry) are indeed more likely to be taken over and that their growth performance tends to be better compared to plants without ownership change. A clear drawback of this study is that it does not differentiate between domestic and foreign acquisitions.

(c) Foreign entry and the performance of DO firms: Contrary to the literature reviewed under (a), here the gap is not related to some superior asset of the FO Multinational, but is a result of the effect of a FO entrant on the market structure. Entry affects the "rules of the game" (type of competition) and may have a direct impact on the conduct and performance of established firms - be they domestic or multinational. Foreign entry has been found to exert an effect on indigenous firms in various industries, measured by indicators like profits (e.g. Driffield and Munday, 1998), productivity (e.g. Baldwin and Gorecki (1991), excess capacity, growth (Mata and Portugal, 2000), employment (McGuckin et al. 1995) or market share (Baldwin, 1995). Even if the performance of DO firms is negatively affected by foreign entry, the possibility nevertheless remains, that the former may still show a superior performance. Yet, *in praxi*, this is not very likely, since as has been argued above, foreign entry of weak firms is rare, the more so, since incumbents are typically strong firms (see III.1. below).

III. The Theory of Multinational Firms and Performance Gaps

The general question of performance differences between firms has been approached in the industrial organisation literature by drawing on market structure and firm conduct. Market structure impacts on the conduct of firms and the resulting performance feeds back on the structure and conduct. While "structure" includes aspects like firm size, concentration or the existence of entry-barriers, "conduct" relates to the creation of entry-barriers like advertising-expenditure, R&D-expenditures (sunk costs) or pricing policies and strategic behaviour in particular. The latter factor is of considerable interest here, since it has been largely excluded from the mainstream international business literature (see Acocella 1990), which focuses primarily on the combination of firm- and location-specific advantages.²

The following section assesses how far the international business and the industrial organisation field have come in understanding what ownership means for performance of FO firms, by grouping the underlying causes in three groups.

1. The Specific Advantage Hypothesis

The Theory of the Multinational Enterprise (Markusen 1995) deals with the questions, why MNEs exist and why they invest abroad. In the centre of the economic theory of MNEs is the specific-advantage hypothesis (Caves 1974, 1996; Koutsoyiannis 1982, Dunning 1999). It is argued that the existence of MNEs hinges on the nature of the specific advantage of the firm. This advantage is no different from those discussed above, which enable a firm to enter a market (i.e. overcome barriers to entry) and it can be denied to competitors (i.e. kept internally by the creator, the firm) and transferred (i.e. it is internationally mobile). MNEs will therefore be concentrated in knowledge-intensive sectors, which are generally characterised as growth- and high-productivity industries.

The *incentive to internalise* the advantage stems from the possibility of market failures when contractual market transactions are used. The *mobility* stems from its intangible nature and leads to zero marginal cost when it is used in an additional affiliate abroad.

Why these firms invest abroad is explained by the position of the MNE relative to its competitors abroad. It is conceivable, that a foreign entrant into a market has some disadvantage vis-à-vis established firms. The specific advantage hypothesis states that the firm-specific advantage

² While most theoretical and empirical evidence suggests that FO firms perform *better* in almost every field there are also some general and some specific arguments of why FO firms might perform *worse* (see e.g. Harris and Robinson, 2001, p. 8; and Li and Guisinger 1991):

- because of a time-lag of assimilating new plants into their FDI network
- because they acquire lemons but fail to improve these plants
- learning costs
- management problems
- nature and type of activity (vice versa for superior performance)
- life cycle arguments

compensates for such disadvantages³. (Koutsoyiannis 1982) A key prediction of this strand of theoretical literature then is that the firm-specific advantage gives rise to productivity gaps. This argument is consistent with the notion that MNEs possess assets, where imitation by competitors is very difficult and diffusion therefore slow.

2. The Strategic Advantage Hypothesis

FO firms exist in or enter into a certain market structure. Their conduct follows the logic to exploit optimally their firm-specific advantage abroad.

The Industrial Organisation (IO) approach argues that the firm-specific advantages referred to above, arise "as a product of oligopolistic rivalry" (Acocella 1990, p. 234). Contrary to the specific-advantage hypothesis, firm-specific advantages are not assumed as given. The contribution of the IO-approach is therefore to (re-)introduce aspects of power and strategic behaviour. The strategic elements of FDI are important and include for example: creation of excess capacities / over-investment (cf. Lyons 1987) by the incumbent (FO) firm in order to deter market entry by competitors; take-over of a competitor to reduce excess capacity and pressure on market prices; or the creation of entry barriers based on firm-specific advantage, e.g. Harris (2000, p. 13); collusion and oligopolistic reaction in the sense of Knickerbocker etc. What these examples have in common is that their outcome is usually inefficient (Acocella 1990, p. 241). Such behaviour is especially pronounced with MNEs, since "they force each other in several markets and hence recognise their mutual dependence more fully" (Caves 1996, p. 90ff.). Needless to emphasise that foreign entry also affects the local firms as it "...forces local firms to take action to protect their market shares and profits" (Blomström and Sjöholm, 1999) which is likely to lead to productivity growth of local firms. Yet, to reduce the notion of strategic behaviour to the level of firm competition would fall short of the concept as "strategic interdependence with respect to governments and unions is particularly interesting." (Lyons 1987, p. 78).⁴ Thus, strategic behaviour may give rise to performance gaps and is especially important in industries where market dominance and few firms are found. Abd-el-Rahmen (1991) emphasises for example, that performance gaps between firms with identical products - under given location specific advantages - are explained by firm-specific, individual behaviour of the conditions of imperfect competition. (cf. also Nelson 1991)

Needless to mention that strategic behaviour is tremendously difficult to grasp empirically and therefore studies are rare.

³ Whether the firm-specific advantage just compensates or over-compensates the disadvantage, is not discussed in the literature. Yet, the latter would be a necessary condition for performance gaps.

⁴ See the examples on instruments by MNEs mentioned in 3.1. above.

3. Other factors

Do the two hypotheses stated above provide a satisfactory explanation of performance differences between FO and DO firms? Or does multinationality *per se* or foreignness of the firm provide additional explanations to performance gaps, since they impact on structure and conduct? The discussion of these questions on the basis of previous empirical research leads to the conclusion that while foreignness as such is not a significant factor, results point to the beneficial effect of multinationality *per se*. In other words, not simply because firms are FO, they exhibit different performance, but because they are MNEs, generating intra-firm and extra-firm spillovers. This distinction may seem just a marginal one at first glance, yet it is important as we will see later on.

3.1. The merits of being a multinational

As Acocella (1990) convincingly argues, it is not only the mere existence of firm-specific advantages that gives rise to superior productivity, but also the multinationality of the firms itself. This aspect is stressed by Doms and Jensen (1998), who find only very few performance gaps between U.S. DO and FO Multinationals in the U.S.⁵ Two types of advantages of being part of a global network within an MNE are mentioned in the recent literature: (a) FO affiliates enjoy better access to foreign markets through intra-firm trade and network economies, such that they can operate more profitably on a larger scale (Globerman et al., 1994, p. 154). Size and scale effects have been revealed in various studies. (b) FO affiliates can draw on their parent's managerial expertise to manage the complexity of larger scale. (c) In addition, the possibility of spillovers between plants within a multi-plant firm mentioned above should not be underestimated as a factor in the case of horizontal integration or gains of specialisation deriving from the fragmentation of production stages (Egger et al. 2000) in vertical integration; (d) MNEs through their industrial and geographical diversification have a more extensive set of information and better capacity for understanding different situations (Caves 1996); (e) instruments available to the MNE against national governments and regulations are more incisive than those used for the same purpose by uni-national firms (*ibidem*; e.g. transfer pricing). If these arguments find any empirical relevance, thus performance among MNEs should differ hardly, regardless of ownership.

3.2. Path-dependency and Performance

⁵ This might also be an indication for the well-known fact that firm-specific advantages across countries are more similar on the industry level than across firms in different industries in one country. This should lead to smaller performance gaps between firms of the same industry across countries than within countries across industries. This hypothesis has not yet been tested empirically.

Discussion of firm-specific advantages has led to the conclusion that MNEs are found in technology and knowledge-intensive industries. In the words of Markusen (1995, p. 172), "multinationals tend to be important in industries and firms with four characteristics: high levels of R&D relative to sales; a large share of professional and technical workers in their workforces; products that are new and / or technically complex; and high levels of product differentiation and advertising. These characteristics appear in many studies, and I have never seen any of them contradicted in any study." Access to superior technology creates additional possibilities for learning internally and building on existing strengths is important in endogenous growth processes. Also to tap into local knowledge bases is easier if a firm is geographically diversified. Non-MNEs may not have this possibilities and operate older, less efficient plants.

3.3. Accounting Rules and Performance

Accounting rules and the more so, accounting practices (e.g. profit shifting, tax avoidance strategies) impact on the financial performance. This is mainly a structural factor (see below) which biases the reported financial strength of firms, which can hardly be dealt with in a satisfactory way empirically.

3.4. Corporate Governance and Performance

If corporate governance structures are still largely national (Buckley 2000, p. 289), or if there is at least a US- and a continental system, they may lead to performance differences, if the monitoring efficiency differs. Also, the goals of the management may differ (e.g. growth vs. profitability) depending on the expectations of the shareholders or stakeholders. Comparably to the discussion whether public-owned businesses are inefficient when compared to private-owned businesses there are large numbers of possible determinants (e.g. the dispersion or concentration of shareholders) so that it remains mostly an empirical question which system is superior in terms of firm performance.

IV. Structural Characteristics

1. *Wage gap*

Wage gaps between firms in general arise for a number of economic and institutional reasons. The organisation of production by firms may be such that FO firms employ more skill-intensive employees than DO firms (Doms and Jensen 1998, p. 240f). Also, higher wages may give rise to higher levels of effort by workers. The high capital intensity of FO firms that has been found in many empirical studies (see below), encourages firms to pay efficiency wages, since it is more costly for capital intensive firms to suffer employee shirking or absenteeism (Globerman et al. 1994, p. 153). Similarly, Feliciano and Lipsey (1999, p. 9) maintain that "workers are not the same." Even comparable DO firms in the same industry may pay lower wages than FO firms, if the latter consider themselves less capable of monitoring workers in a FO environment.

Higher wages may also provide an incentive of domestic workers to accept foreign management, e.g. following a take-over of a DO firm by a FO firm.

Larger plants / firms pay higher wages (rents accruing from the market power are shared with labour) and this is a universal finding in many studies.

Wage differentials may also arise on factors, such as (Buckley and Enderwick, 1983, p. 400) differences in productivity levels; preference among many FO firms to engage in plant level bargaining (see 3. below) etc.

New investments are often associated with higher labour productivity. If FO firms are generally younger firms, the positive correlation between foreign participation and wages could represent a vintage effect (Aitken et al. (1996, pp. 354, 358).

If FO firms incur higher search costs in foreign labour markets, they tend to reduce labour turnover by paying higher wages and / or to engage in other benefits like training etc. Summarising, reasons why FO firms pay higher wages derive either from superior performance or from certain disadvantages.

2. Labour relations

It is normally assumed that both parties, unions and management, have an interest to negotiate. Negotiations depend on bargaining power and market conditions. Foreign ownership implies that there is a third party, the parent abroad, which may increase the length of negotiations. Higher strike-propensity by FO firms may stem from the fact that information about the firm is less credible to the union when it applies to an affiliate of a foreign company or that the foreign company has less commitment towards a foreign region than to its home region. Lower strike-propensity derives from the fact that FO firms may pay higher wages than national firms (at least within the same industry, see 1. above) or that FO affiliates must appear to be "good corporate citizens". An institutional argument applies in some cases, if FO firms have a weaker position vis-à-vis labour unions than DO firms. If, therefore, FO firms adhere to legislation mandating minimum wages, overtime pay etc., their wages will be higher. They therefore set up protocols for negotiation, which reduce information asymmetries and speed up negotiations.

The main institutional argument relates to the role of labour unions. On the one hand, FO firms may pay a wage premium to deter unionisation (Doms and Jensen 1998, p. 243), if there is a desire of FO firms to discourage unionisation or buy-out restrictive job practices. On the other hand, where FO firms enter an industry with a high level of unionisation, the higher degree of unionisation may lead to higher wages. Such evidence is produced by Feliciano and Lipsey (1999), on the regional distribution of FO firms in the U.S.

3. Skill gap

The main source of skill gaps lies in the fact that one group of firms uses superior technology. If the specific-advantage hypothesis is valid, we should expect FO firms to employ more skilled workers, since sophisticated production technology requires fewer workers of higher skill. In another view, the higher wage in FO firms is the outcome of a bargaining game, in which workers share the extra rents generated by the superior technologies (Head, 1998, p. 257).

There might also be an incentive for workers in FO firms to invest in FO-firm-specific human capital, expecting a "fair" wage rate to be higher than that in smaller, less competitive DO firms. (e.g. in Ireland)

4. Productivity gap

The first source of productivity gaps are differentials in the mix of activities undertaken by FO firms and DO firms. (Globerman et al., 1994) "Strategic demands frequently require that individual units be assigned differentiated roles" (Gomes and Ramaswamy 1999, p. 177). If FO firms undertake a set of activities, different from that pursued by DO plants, they might perform better in the case of a higher degree of specialisation; or in research units, which employ highly trained staff; or in highly-automated production facilities, which require highly qualified blue-collar workers and have above average productivity levels). This is directly related to skill gaps.

Also, failure of domestic producers to adopt 'best practice technology' or 'frontier technology' (Maliranta 1997, p. 2; Oulton 1998a, p. 50) has been discussed giving rise to productivity gaps. Inferior access to technology by DO firms may have several explanations itself. Their geographical space of operation may be smaller, they may be absent from certain markets at all, lacking the possibility to tap into the local knowledge-base abroad or not profiting from regional agglomerations; the feedback from their affiliates may be less efficient or the activities of the affiliates do not allow technology sourcing; they might not have the necessary information; or they lack the capability to make efficient use of acquired technology (i.e. the absorptive capacity), which is related to learning processes and path dependence. Most factors mentioned are related to multinationality. Such issues have been termed "best practice model" vs. "random model" by Davies and Lyons (1991). The latter suggests that firm-specific advantages may be randomly distributed, i.e. they are not systematically related to industry factors.

Another source of productivity gaps is simply a higher input intensity per worker, which is related to capital- or technology-intensity. As Globerman et al. (1994) show, the gap vanishes, once they control for size or capital intensity. Oulton (1998a) provides two reasons why FO firms may be more capital intensive than DO firms, both are related to higher costs of capital: (a) DO firms face higher cost of capital than FO firms; and (b) DO firms are more exposed to the home market, while FO firms are

better able to spread risk globally (but this applies to globalised DO firms as well). Also, DO firms have to rely on credit markets whereas FO firms have access the cheap sources of credit (e.g. the cash-flow of the MNE-network) without paying a risk premium. But this again relates to the question of national vs. multi-national firms rather than to FO vs. DO firms.

Also, FO firms and DO firms may make different use of public infrastructure (including the institutional environment, national system of innovation etc.). The particular configuration of firm-specific advantages and location advantages is superior for FO firms, since FO firms undergo a search and trial-and-error process by investing and divesting plants continuously in more locations than uni-national DO firms, their existing distribution of plants across locations could reflect a better match.

An additional source of productivity gaps has been identified by the literature concerning acquisitions, namely that FO firms may be particularly good at "picking the winner", frequently also termed as "cherry pickers" (Oulton 1998a, b). The "restricted matching hypothesis" (McGuckin and Nguyen 1995), i.e. that firms with above average productivity are taken over, is supported by many studies, but it is difficult to establish cause and effect and also in most cases, it is not clear, whether DO firms or FO firms are involved. An exception is evidence provided by Moden (1998), who reports that in Sweden, it is primarily high productivity firms which are acquired by FO firms.

Furthermore, parent country distribution matters. Is the gap correlated by parent country, as pointed out already in "The Future of the Multinational Enterprise"? Davies and Lyons (1997) conclude that the productivity gap between FO and DO firms is correlated with the overall international productivity differential between parent country and host country.

5. Growth gap

Does the larger size of FO firms also suggest that FO firms grow faster than DO? Gibrat's law is certainly worth considering, since firm-size plays a role here.

Turning to ownership on the one hand, there are several reasons why FO firms may grow slower than DO firms. Blonigen and Tomlin provide an argument for *slower* growth rates of FO firms in the case of first entry into a market, because of uncertainties like inefficiencies or problems in obtaining material inputs. Inefficiencies may arise from monitoring problems of workers (see below) or other factors. Another factor behind a slower growth of FO firms could be their lower capital intensity, for example if they start as small plants.

On the other hand, there are also powerful arguments for *higher* growth rates of FO firms. Blonigen and Tomlin (1999) report that prior experience and learning are substantial for FO firms' subsequent investment

and growth-performance. Maliranta (1997) measures empirically the importance of spill-overs between plants inside the same firm.

Because growth is related to learning, the type of FDI (green-field vs. M&A) is important, since it makes a difference whether an investing firm acquires a certain stock of know-how instantaneously and has to adapt it or whether this has to be built up from scratch, not reaping any benefits of path-dependence. Matalony (2000) studies the lower performance of green-field investors vs. acquirers in the case of FDI in the U.S.

6. Profitability gap

In general, profitability gaps between firms can be referred to accounting factors, to managerial explanations and to economic factors. Among the *accounting* factors, the motivation of MNEs to minimise their tax burden may be responsible for an inferior performance of FO firms. Among the *economic* factors, the higher capital intensity, which is a primary force behind an increase in labour productivity, may lead to higher profit margins.

If opportunity costs of internally generated funds are lower than that of externally generated funds, managers will accept a lower profitability when they use re-invested profits. In addition, the higher capital intensity may make the firm accept lower profitability abroad, in case the FO firms have lower costs of capital at home. The more global the financial markets are and the lower the barriers to sourcing funds abroad, the smaller will be the interest differentials and the easier will be access to capital also for DO firms. Moreover, connected to firm size, market share has been identified to be a major explanatory variable of profitability (Matalony 2000).

There is a direct link to productivity gaps as Driffield and Munday (1998, p. 706) posit that profitability decreases, if upward pressure in wages is not accompanied by productivity increases.

The role of age as a determinant of profitability is twofold. On the one hand, young affiliates of FO firms entering a new market may have to be cross-subsidised by their parent for some time. Such FO firms may have high start-up and restructuring costs. Blonigen and Tomlin (1999) maintain that newly acquired firms have a higher debt burden which is responsible for the low profitability. On the other hand, established affiliates which reap profits, may motivate the firm to use transfer pricing to shift profits. This depends very much on the characteristics of the market, as profits are generally declining in mature industries.

The type of entry is important for the costs incurred, since a green-field investment enjoys all the advantages of a newcomer, i.e. it has the advantage of the choice of the optimum location, the implementation of the state-of-the-art technology and the choice of the optimum plant size. Established firms, on the other hand, may be located in marginal locations; may not follow regional shifts in production etc. Thus, a performance gap may arise simply from the different age of FO firms and DO firms. This

information is hardly available and only few studies are able to introduce age as a control variable (see e.g. Blonigen and Tomlin, 1999).

After a take-over, the *management* in a FO affiliate may be under higher pressure than a management of a DO firm. Therefore, these managers "set their sights higher" (Ylä-Antilla and Ali-Yrkkö 1997). Normally they also seek to have a co-operative relationship with the workers in order to fulfil the goals set up by their FO parent company.

7. *Research and Development*

Fors (1997) reports on the substantial intra-firm transfer of technology from affiliates to their parent companies and vice versa, which may be one cause of R&D-related gaps. The idea that R&D-spending might be reduced in the course of a foreign acquisition, because it is moved to the new headquarter abroad or seized altogether, has been put forward by several authors. Other things equal, this would lead to hypothesise a lower R&D-spending of FO firms. Also, the division of R&D-activities between parents and affiliates has been described as basic research being pursued in the former and applied research or adaptation in the latter. In order to reveal such arguments empirically, control for size and industrial distribution is necessary.

This subsection has surveyed briefly some structural factors that are likely to give rise to various performance gaps. To what extent performance gaps are explained by ownership is an empirical question to which we turn now.

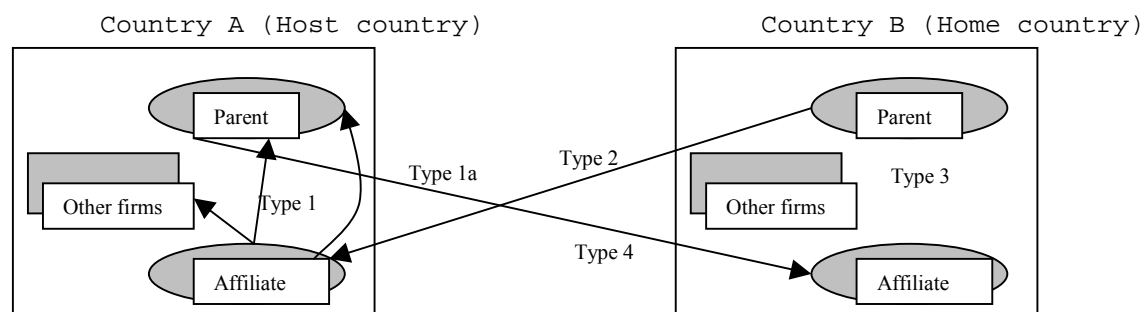
V. A note on methodological approaches

Firm-level data provide some advantages over FDI stocks or flow data as for example Griffith (1999b, p. F421-2) points out that "... foreign production ... and foreign direct investment are not the same thing." In addition to this obvious fact, the crucial advantage of firm-level data can be seen in the possible combination of data on foreign production and firm-performance indicators, which are hardly available in FDI statistics (e.g. simple indicators like sales figures). Given the detailed data requirements as described in this section, it practically rules out the use of FDI data for the purpose of performance comparisons.

The distinction between FO and DO firms can be applied to every analysis in firm performance - subject to data constraints. It is not different from creating sub-samples of firms by other parameters than ownership. Methodological aspects - apart from aspects of pure measurement (e.g. Bernard and Jones, 1996) - include (a) the type of comparison, (b) the choice of the unit of analysis, (c) the choice of the control variables, and (d) the choice of the comparison group of firms.

(a) There are basically four types of comparisons possible when considering the performance of FO firms (cf. Figure 1). While in principle, the type of comparison should be driven by the problem in question, *in praxi* we find *different* comparisons in search for the same *problem*.

Figure 1. Type of comparisons



Type 1. Majority / minority foreign-owned affiliate in host country vs. rest of the host country (i.e. domestic firms, exporters and domestic Multinationals)

Type 1a. Foreign-owned affiliate in host country vs. Multinationals only in host country

Type 2. Foreign-owned affiliate in host country vs. parent company in home country

Type 3. Domestic Multinationals in home country vs. non-Multinationals (exporters, respectively) in home country

Type 4. Compares parent companies based in the host country to their affiliates abroad, i.e. in the home country. It should be emphasised that this is *n o t* simply the opposite of Type 2 comparisons, since there might be a huge difference in labour productivity between countries A and B.

(b) What is the appropriate level of analysis - the firm, establishment, plant or enterprise level? The level of aggregation has important consequences for a meaningful choice of industry level, too. (Howenstine and Zeile, 1992, p. 45) The higher the aggregation, the more diversified are firms and therefore can be classified only in broad industries. Large and long-run databases (such as LRD, ARD) often contain

data on plant level *and* firm level, which necessitates a choice, if not both are to be used.

- (i) Firm-level analysis is to be preferred, if economies of scale at the firm-level may be the source of substantial performance differences, they are not captured, if analysis is carried out on the plant level. Moreover, some theoretical arguments discussed above refer to the *firm* level, while empirical analysis is often on the *plant* level, without a possibility to examine intra-firm plant spillovers. Plant level analysis generally excludes spillovers between plants of the same company (an exception is e.g. Maliranta 1997). For example, using the ARD (UK), Griffith (1999b) argues on the advantage of using expenditure on physical capital by FO firms and to use establishment rather than plant level data.
- (ii) Plant level analysis also has advantages as firm-level data often hide important dynamic activities within the firm. (See e.g. McGuckin et al. 2000, where the results derived on the plant level do not hold on the firm level.) Another example is a paper by Harris (1999) who criticises Griffith (1999b) on the basis that she uses establishment rather than plant data: "... the establishment is not an economic unit, like a plant; it is an accounting unit ... A typical establishment includes plants of different sizes and different vintages, and with relatively frequent compositional changes over time this makes it difficult to undertake certain types of analysis in a economically meaningful way." (p. 2) An example of relevance for productivity gaps would be the calculation of capital stock of different vintage in various plants of the same establishment. One particular area where such intra-company spillovers are of relevance are mentioned by Doms and Jensen (1998, p. 238), i.e. "auxiliary establishments". Such establishments create overhead costs, which may reduce the comparability between plants. Plant level analysis excludes the crucial point of multi-nationality and the creation and use of firm-specific advantages.

Plant level data also generally offer advantages over firm level or industry level data, since they may account for the large intra-industry variance of the indicator in question, which often is larger than the inter-industry variance (e.g. Doms and Jensen, 1998, p. 236).

All in all, the choice of the unit should be guided by the idea to separate the effects of ownership characteristics and not to hide them behind factors correlated with the gap in question. For example, if higher wages in DO firms are due to better monitoring this should not be buried in the fact that larger firms employ more skilled labour or are more productive. Such difficulties also explain why international comparative studies are scarce.

(c) Many authors emphasise that the possibility of a spurious relationship exists "between foreign-ownership levels and productivity levels. [...] Observations of higher average productivity levels among foreign affiliates may simply reflect the fact that foreign affiliates are clustered in industries enjoying above-average productivity levels for

reasons unrelated to Foreign Direct Investment" (Globerman et al. 1994, p. 144; cf. also Howenstine and Zeile 1992, p. 53). The danger that the impact of factors like size and industry be wrongly attributed by ownership is normally avoided by using a set of control variables. In many cases, controlling for firm-specific variables reduces substantially the weight of an ownership variable, putting into question some of the gaps revealed by descriptive statistics.

(d) The last important issue mentioned here is the composition of the "non-foreign" firms, i.e. the remaining firms after subtracting the FO firms from the total population. This residual may consist of a mixture of purely national firms, of multinational firms and of exporting firms. Hardly discussed in any of the empirical studies, multinationality does matter as a driving factor behind performance gaps. (see III.3) One particular problem, which can be controlled for, is the size bias in the sample of DO and FO firms: quite often, a few large FO are compared to a large number of small DO firms (*inter alia* this problem arises in studies on Ireland).

Figure 2 summarises the methodological aspects.

Figure 2. Methodological Aspects

Unit of Analysis	Ownership	Foreign	Domestic Firms		
Firm level	Control Group of Firms	<i>Multinationals by definition</i>	<i>Multinationals</i>	<i>Exporters</i>	<i>Purely domestic</i>
	Control Variables	Home Country, Industry, Size etc.			
Plant level	Type of Effect	Direct	and Indirect		(Spillovers)
	Performance Indicators (growth and levels)	Economic* <i>GR, SK, TFPR, LPR, CPR, VA, WA, FI (PF), RD, EX, CI</i> Institutional <i>LR</i>			

*) Note: For abbreviations see the subtitles in section III below.

VI. Past Empirical Research

A number of empirical studies have been produced, which examine various performance gaps. All studies focus on the manufacturing sector, due to data availability, except Oulton (1989b), who studies the services sector. The standard empirical model has the following structure⁶:

$$A_gap_i = f_i(FDI_i, Z_{i1}, Z_{i2}, O_{ij}), \quad (1)$$

where Z_{ij} is a vector of other firm- and industry-specific factors, postulated to impact on A_gap . A_gap may be defined in levels, in growth-rates or in differences between DO and FO firms. The components of Z_{i1} include a wide range of industry-specific (e.g. concentration ratio -> competition intensity) and firm-specific (e.g. royalty payments -> technology; skills -> marginal product) variables, according to the underlying theoretical arguments mentioned in the previous section. The regressor accounts for the variation of the dependent variable and is often specified in translog functional form to yield an elasticity of substitution (negative) or complementarity (positive). Three variables, namely size of plants or firms, industry and parent country are standard control variables irrespective of the particular gap. The other variable of interest in vector Z_{i1} measures, whether an indigenous firm is a multinational firm or a purely domestic firm. The components of Z_{i2} are specific to the gap in question. Ownership is accounted for by the variable O_{ij} , which may be a dummy variable (0,1) or represented e.g. by the share of employees in FO firms. Table 1 summarises the studies surveyed by different indicators.

Table 1. Descriptive summary table: Empirical studies in comparison

	Nr.+)	Superior Group of Firms ^{*)}		
		FO	DO	(--) ^{**)}
By performance indicator				
GR ... Growth	6	5	0	1
SK ... Skill Intensity	3	2	0	1

⁶ It is assumed that O is independent of the error term (e). If O is correlated with e , i.e. endogenously determined, the instrumental variable approach is often used, however, this limits what can be said about causality.

PR ... Productivity	27	18	0	9
WA ... Wages	11	6	2	3
PF ... Profitability and Financial Performance	8	4	2	2
RD ... Research and Development	4	3	0	1
EX ... Export Orientation	2	1	0	1
CI ... Capital Intensity	3	3	0	0
LR ... Labour relations	2	0	1	1
EM ... Employment	1	1	0	0
SI ... Size	2	1	0	1
By host countries				
UK	16	-	-	-
US	11	-	-	-
A	4			
CAN	3	-	-	-
SF, VEN, MEX	2	-	-	-
	each			
JAP, INDIA, INDON, SWED, PORT, IRE	1	-	-	-
	each			

*) drawn from the overall findings of the study

**) undecided or inconclusive or not analysed (several studies were included, which examined ownership change, yet did not divide between DO and FO firms)

1. Wage gap (WA)

The *wage gap* is analysed *inter alia* by Buckley and Enderwick (1983), Blanchflower (1984), Globerman et al. (1994), Feliciano and Lipsey (1999) and Oulton (1998a). The wage gap is a possible sign of a skill gap, as relative wages for more skilled workers have been rising in general. Globerman et al. (1994) find that the wage gap vanishes, once they control for size and capital-intensity. Feliciano and Lipsey (1999) find qualitatively identical results for U.S. manufacturing, with wage gaps related to industry composition. For other sectors, however, a gap of 8-9% remains even after controlling for size, industry and U.S. state. A paper by Oulton (1998a) found that foreign establishments in the UK are more human capital intensive (positively correlated to wage levels) than domestic establishments, even within the same industry. Aitken et al. (1996), examining wage gaps in Mexico, Venezuela and the United States, found that higher levels of foreign investment are associated with higher wages and that the lack of spillovers between FO and DO firms explains the wage gap. Wage differentials are persistent over time and across industries after controlling for a number of variables.

2. Labour Relations (LR)

Labour relations in DO and FO firms are studied particularly in Canada (Carmichael, 1992; Cousineau 1989; Creigh and Makeham 1978; Greer and Shearer 1981). There is mixed evidence for the hypothesis stated above, generally not pointing to "bad behaviour" of FO firms.

3. Skill gap (SK)

Howenstine and Zeile (1992), Blonigen and Slaughter (1999) and Doms and Jensen (1998) reveal a skill gap between FO and DO firms in the U.S. This is clearly related to capital-intensity and thus is a determinant of productivity gaps discussed in subsection 4 below. Here, one has to control for the difference in shares of production workers to non-production workers in FO firms and DO firms in order to take into account the skill-mix of activities within industries. Howenstine and Zeile (1992) find that FO affiliates in the United States are concentrated in manufacturing industries that require a higher level of employment skill. They examine, whether these characteristics differ significantly between FO firms and DO firms in the same industries and find that for one half of the industries, payroll per employee (as a broad measure for employee skill level) in FO firms exceeds that of DO firms by more than 10 per cent. Foreign ownership is, however, not related to a factor that might explain such difference, namely average scale of plant operations. Blonigen and Slaughter (1999) find that inward FDI does not contribute to skill upgrading within manufacturing industries. On the contrary, distinguishing by type of investment, they show that Japanese green-field FDI have a lower demand for skilled labour.

The studies related to wage and skill gaps suggest that factor demand of DO firms and FO firms - even within the same industry - varies considerably, but only small part of the gap is attributed to foreignness, rather size and factor intensities are important explanatory factors.

4. *Productivity gap (PR)*

The *productivity gap* has gained the widest attention in empirical research in this field (e.g. Pratten 1976, Davies and Lyons 1991, Maliranta 1997, McGuckin and Nguyen 1995, Moden 1998, Howenstine and Zeile 1992, Oulton 1998a, 1998b, Ylä-Anttila and Ali-Yrkkö 1997, Doms and Jensen, 1998, Griffith 1999a,b, Harris 1999, Harris and Robinson 2001a,b).

Davies and Lyons (1991) find a productivity gap of 20 percent, which is decomposed into a "structural" and an "ownership" effect. The gap is persistent on different levels of aggregation, i.e. on 2-digit and 3-digit level industries and the weight of both effects remains mainly unchanged. Therefore, within 2-digit level industries, contrary to expectations, FO firms do not cluster in the high-productivity 3-digit industries. The gap therefore is more a firm- or plant-specific phenomenon, rather than industry related. There is also a size effect reported in many studies as lower productivity firms are acquired if they are larger firms (cf. Feliciano and Lipsey 1999, p. 11).

Oulton (1998a, b) studies productivity gaps in the UK; in manufacturing (1998a), labour productivity is 38 percent higher in FO firms, which is mainly determined by their higher capital intensity (physical and human). In service industries (1998b), where Oulton examined over 49,000 companies, a productivity gap of one third over DO firms' productivity remained after controlling for various structural differences

(size, age, parent country). Again, a more skilled labour force and a higher capital-intensity in FO firms explains most of the variation.

Also, Oulton (1998a) emphasises an *additional* productivity advantage of US affiliates in the UK of 9-20%. In contrast, Globerman et al. (1994) find no significant difference between parent countries. Such results may also derive from a different mix of activities of affiliates from adjacent or far-away parent countries, which affects the costs of production.

A paper on U.S. establishments by Doms and Jensen (1998) examines the role of multinationality for productivity. DO firms that are multinationals are compared to FO affiliates and purely DO firms. The multinational DO firms and FO firms perform better than the purely DO firms, suggesting that foreign ownership is of less importance. Observed differences are considerably reduced by control variables (e.g. from 50% to 20% for labour productivity). Although their analysis is on the plant level, they include auxiliary plants, thus reducing the problem of undercounting non-production workers on the establishment level. This has implications for labour productivity and skill / wage levels.

Evidence by Howenstine and Zeile (1992) shows the tendency of FDI establishments to operate in industries characterised by higher capital intensity. While this evidence is only descriptive, it gives an indication of higher labour productivity (depending on the type of the underlying production function). Maliranta's study on more than 5,000 Finnish plants reveals a weak foreign ownership effect (with uncertain causality). Using a large number of control variables, *inter alia* multi-plant vs. single-plant firms, it is one of rare studies on total factor productivity (inputs are: labour, machinery, electricity, rents per hour). Maliranta also points to time effects (e.g. in the implementation of technology in a newly acquired plant).

Yet, FO affiliates may also perform worse than DO ones in terms of productivity, e.g. in the case of screw-driver factories, which employ low-skilled workers, pay below-average wage levels etc. The lower skill-intensity of Japanese green-field investments in the U.S., as reported e.g. by Blonigen and Slaughter (1999), is a recent example for the latter case.

Moden (1998) studies post-acquisition productivity focusing on foreign acquisitions in Sweden. He finds that while foreign acquisitions have increased labour productivity, the development of total factor productivity is more uncertain which he attributes to time effects. Such studies give some support to the "restricted matching hypothesis", yet this seems to depend on firm size and on the initial productivity level.

Griffith (1999a,b) consider whether the stylised fact that MNEs are more productive is borne out empirically. Using a sample of UK car firms and distinguishing between acquisition and greenfield entry, she finds relatively small differences in total factor productivity and FO firms are not more productive than UK DO firms in subsectors. Harris (1999) repeats the estimation of Griffith (1999a) and using the same methodology, finds the opposite results, namely that productivity gaps do exist.

Griffith and Simpson (2000) - building on Griffith (1999a, b) - extend the analysis to the total manufacturing sector, dividing FO firms into "always FO" and into "FO taken over" (changing ownership). The authors report gaps of TFP between these two groups, depending on whether one looks at levels or growth rates. They also find a skill gap in line with the productivity gap. Bellak and Pfaffermayr (2000), based on 700 establishments, find a superior performance of FO firms in Austria in all indicators used (sales, employment, productivity and capital intensity). They also find that DO and FO MNEs are similar (see also Gugler 1998) and that there is no home country effect with respect to German investments in Austria.

5. *Growth gap (GR)*

Empirical studies reveal that plant size and plant growth are not independent. *Growth* and *size* gaps are explicitly studied by Kumar (1984), Blonigen and Tomlin (1999) and Oulton (1998a). Howenstine and Zeile (1992) provide descriptive evidence on plant-scale gaps, maintaining that FO establishments tend to be larger, on average, than U.S.-owned establishments. The scale effect may also be responsible for a large portion of the above described skill and capital intensity of FO establishments compared to U.S. establishments, as these gaps are related to size. From a sample of 1,752 establishments, which existed over 1973-93, Oulton (1998a) concludes that the gap of the annual average growth rate of U.S. owned establishments in the UK was 1.82 percentage points compared to UK owned establishments during 1973-93. Also, value-added and capital per employee showed higher growth rates. Oulton reports considerable differences between U.S. owned and FO establishments from other countries in the UK.

An explicit study on plant growth has been put forward by Blonigen and Tomlin (1999), who compare size and growth of Japanese plants in the U.S. They search for evidence on Gibrat's Law and ask whether size and growth of FO and DO establishments in the U.S. are similar. Since firm growth is also related to firm age, they control (in addition to other variables) for age. Furthermore, since the type of entry of Japanese firms into the U.S. market may affect growth-rates of the affiliate via learning, they distinguish between acquisitions and green-field FDI. They clearly reject Gibrat's Law, since smaller plants grow faster than larger ones. Their findings also reveal substantial learning effects and effects of earlier investments on the likelihood of future investments.

6. *Profitability gap (PF)*

Several studies on the *profitability gap* (e.g. Mataloni 2000 and his review of earlier literature, Kumar 1990, Kumar 1984, Ylä-Anttila and Ali-Yrkkö 1997, Dickerson et al. 1997 with regard to acquisitions) have found substantial differences between the profitability of FO firms and DO firms,

reflected by a gap in the rates of return. It should be emphasised that profitability is one plant level characteristic where FO firms generally perform worse than DO firms. With company-level data, Mataloni (op.cit.) finds that only a small portion of the gap can be explained by an industry effect (12%), while market share and age effects (i.e. market power and newness) are significantly correlated with the profitability gap. A paper by Kumar (1990) examines the determinants of profit margins of affiliates of MNEs and local firms in 43 Indian manufacturing industries. Here, FO firms have higher profit margins than DO firms, which is explained by greater protection from entry-barriers of MNEs and a persistent knowledge advantage of MNEs (as a basis for firm-specific advantages). Contrary to such results, comparing purely DO UK-firms and UK-firms with FDI, Kumar (1984) shows, that the degree of overseas operations has no strong influence on profitability or growth of the parent firm, which would be a possible cause of a superior performance of DO firms, which are MNEs. Apart from direct comparisons, providing evidence on post-acquisition performance from a large panel of UK firms, Dickerson et al. (1997) report that acquisitions have a detrimental effect on company performance (pre-tax profits). Internal growth yields a higher rate of return than external growth. To our knowledge, no such evidence has been produced comparing FO firms and DO firms, i.e. whether inward FDI was made in the form of acquisition or green-field FDI and how this relates to profitability. Little (1981), on the basis of foreign takeovers of 78 publicly owned firms during 1979-80 in the U.S. concludes that foreigners are purchasing "companies across a broad spectrum of financial health" and emphasise the large industry variation. See also Caves and Lee (1997) for effects of acquisitions on profits.

7. Research and Development (RD) / Technology

Howenstine and Zeile (1992) find a mild correlation between R&D, measured by employees in R&D or R&D-sales ratio, and the share of employment accounted for by all FO firms across 45 industries in the US.

Kearns and Ruane (1999) compare FO firms which undertake R&D and FO firms without R&D-activities in Ireland and conclude on a positive relationship of the former with the quality of employment (see also: skill gap). They do not, however, compare this to the domestic sector. While Moden (1998) does not find any correlation between R&D activity and foreign take-overs, foreign ownership is reported to be largest in R&D-intensive industries.

VII. Concluding Remarks and Future Directions

This paper surveyed performance differences between DO and FO firms. The theoretical argument is based on a range of factors, which include input factors (e.g. labour, capital, technology), the performance (e.g. exporting propensity, profitability) and the conduct (e.g. research and development) of firms. The fact that evidence is still scarce is not due to a lack of interest, but mainly due to a lack of data. While the requirements in terms of data availability are still not met by many data-sets, the empirical evidence emerging nevertheless allows a much more differentiated assessment today than in the past.

The theoretical argument of superior performance of FO firms is a contentious issue as it is in some contrast with empirical evidence produced so far. Few studies reveal superior performance of DO firms⁷ and only some report substantial gaps between DO and FO firms *related to ownership*. Almost all studies reveal performance gaps between firms by different parent countries. In most cases, however, performance gaps "disappear" after controlling for firm and industry characteristics, as they, but not foreign-ownership account for most of the variation ("*structural effect*" or "*industry composition effect*"⁸). Besides size and industry distribution the most important explanatory variables are firm-specific advantages, differences in technologies used and different types of activities (implying different factor intensities). The gaps studied are interdependent and linked to each other.

If gaps are persistent even after controlling for firm and industry characteristics, the multinationality (i.e. the international multi-plant firm, Pfaffermayr 1999) of the firms seem to be more important than foreign ownership (see e.g. Doms and Jensen 1998, p. 251; Kumar, 1984). The problem then becomes more an issue of multi-nationality vs. non-multi-nationality rather than FO vs. DO firms. Studies comparing DO MNEs and FO affiliates mostly report negligible performance differences, yet normally the performance of MNEs is superior to that of purely DO firms. This suggests the possibility of intra-firm spill-overs between plants as well as inter-firm spill-overs between FO firms and DO firms and has been termed the "*ownership effect*".

Apart from the fact that empirical evidence suggests a limited explanatory power of foreign ownership it may have theoretical implications regarding the view of firm-specific advantages. They may have to be reconsidered by giving more weight to gains from multinationality *per se* (internalisation advantages, transfer and organisation of firm-specific assets within the firm), independently whether a firm is DO or FO.

⁷ The only gap where most studies report inferior performance of FO firms is in fact „profitability“. Yet, as has been explained above, this may indicate a measurement problem, if firms use transfer pricing and if pre-tax profits are not available.

⁸ i.e., the intra-industry variation is larger than the inter-industry variation.

From a policy view competition among governments for MNEs is based on the belief that FO firms perform better than DO and many of the investment incentives are justified by such argument. Generally, the empirical studies reviewed do not suggest discrimination among firms on the basis of ownership, but by structural characteristics. The fact that MNEs carry these structural characteristics to a considerable extent, opens several policy routes: At least in an industrialised country setting, provided that indigenous firms have a certain managerial and technical level, promoting their structural characteristics could be an alternative to promoting inward investment. Especially, if gaps are small benefits derived from FO firms are likely to be high in terms of technology spillovers, industry composition, rents and competition. The notion of absorptive capacity (see Cohen and Levinthal 1990) comes to mind here. Developing countries⁹, which often lack absorptive capacity, will depend upon inward FDI until they reach some threshold. A good deal of the effects will depend on whether firms are "stickers" (long-run establishments) or "snatchers" (short-run establishments) (Barry et al. p. 40).

Questions, not dealt with in the literature:

- Is there convergence or divergence of FO and DO sectors? (exception: Aitken et al. 1996 on wage differentials)
- How to do international comparisons, how to include the services sector into studies?
- Are survival rates of FO entries higher than DO, since exit is likely for new entrants?
- What is the impact of high-tech vs. low-tech characteristics of industries in both, process and product technology, on gaps?
- Are FO less responsive to entry barriers than DO or are FO even attracted to industries with high entry barriers?
- How large is the effect of different firm-growth rates on market share and profitability of firms and societal gains of countries?
- Do performance gaps exist between horizontally and vertically integrated FDI?

The macro-economic changes and the subsequent organisational responses of firms during the last 25 years have proven that the type of performance comparison set out in "The Future of the Multinational Enterprise" was indeed far looking. Progress in the theoretical arguments and in empirical evidence since then has produced a much more differentiated and variegated picture, starting from the sound basis set up in Peter Buckley's and Mark Casson's book 25 years ago.

VIII. References

Abd-el-Rahmen, K. (1991) Firms' Competitive and National Comparative Advantage as Joint Determinants of Trade Composition, *Weltwirtschaftliches Archiv*, 127, 1, pp. 83-97.

⁹ See Haddad and Harrison (1993) for a discussion on Morocco.

- Acocella, N. (1990) The Multinational Firm and the Theory of Industrial Organization, in: B. Dankbaar, J. Groenewegen, H. Schenk (eds) *Perspectives in Industrial Organization*, Dordrecht: Kluwer Academic Publishers, pp. 233-251.
- Aitken, B., A. Harison and R. Lipsey (1996) Wages and foreign ownership: A Comparative Study of Mexico, Venezuela and the United States, *Journal of International Economics*, 40, 345-371.
- Aitken, B., G. Hanson and A. Harrison (1997) Spillovers, foreign investment and export behaviour, *Journal of International Economics*, 43, pp. 103-132.
- Aitken, B. and A. Harison (1999) Do domestic firms benefit from foreign investment? Evidence from Venezuela, *American Economic Review*, 89, pp. 605-618.
- Baldwin, R. (1995) *The Dynamics of Industrial Competition*, Cambridge UP: Cambridge.
- Baldwin, J.R. and P.K. Gorecki (1991) Entry, Exit and Productivity Growth in: P.A. Geroski and J. Schwalbach (eds) *Entry and Market Contestability*, Basil Blackwell: Oxford.
- Barry, F., Bradley, J. and E. O'Malley (1999) Indigenous and Foreign Industry: Characteristics and Performance, in: Barry, F. (ed.) *Understanding Ireland's Economic Growth*, London: Macmillan Press.
- Belak, C. and M. Pfaffermayr (2000) *Why foreign-owned firms are different: A conceptual framework and empirical evidence for Austria*, HWWA Discussion Paper, No. 115, Hamburg.
(http://www.hwwa.de/Publikationen/Discussion_Paper/2000/115.pdf)
- Berle, A. and G. Means (1932) *The Modern Corporation and Private Property*, Macmillan, New York.
- Bernard, A. and Jones, C. (1996) Comparing Apples to Oranges: productivity convergence and measurement across industries and countries, *American Economic Review*, December, pp. 216-238.
- Blanchflower, D. (1984) Comparative Pay Levels in Domestically-owned and Foreign-owned Manufacturing Plants: A Comment, *British Journal of Industrial Relations*, Vol. 22, pp. 265-267.
- Blonigen, Bruce A. and KaSaundra Tomlin (1999) *Size and Growth of Japanese Plants in the United States*, NBER Working Paper 7275, Cambridge/MA, (forthcoming in the *International Journal of Industrial Organization*).
- Blonigen, Bruce A. and Matthew J. Slaughter (1999) *Foreign-Affiliate Activity and U.S. Skill Upgrading*, NBER Working Paper 7040, Cambridge.
- Blomström, M. and A. Kokko (1998) Multinational corporations and spillovers, *Journal of Economic Surveys*, Vol. 12, pp. 247-277.
- Blomström, M. and F. Sjöholm (1999) Technology transfers and spillovers: Does local participation with multinationals matter? *European Economic Review*, 43, pp. 915-923.
- Brainard, R. (1993) Globalisation and Corporate Nationality, *STI Review*, No. 13, December, pp. 163-190.

- Buckley, P.J. (2000) Cross-border governance in multinational enterprises, in: *Multinational firms, cooperation and competition in the world economy* (ed. Buckley Peter J.), pp. 289-304.
- Buckley, P.J. and Casson, M. (1976) *The Future of the Multinational Enterprise*, MacMillan.
- Buckley, P.J. and Casson, M. (1998) Analyzing Foreign Market Entry Strategies: Extending the Internalization Approach, *Journal of International Business Studies*, 29, pp. 539-562.
- Buckley, P.J. and Enderwick, P. (1983) Comparative Pay Levels in domestically-owned and foreign-owned plants in UK Manufacturing - Evidence from the 1980 workplace industrial relations survey, *British Journal of Industrial Relations*, Vol. XXI, No. 3, pp. 395-400.
- Carmichael, F. (1992) Multinational Enterprise and Strikes: Theory and Evidence, *Scottish Journal of Political Economy*, Vol. 39, No. 1, February, pp. 52-68.
- Caves, R. (1974) Multinational Firms, Competition and Productivity in the Host Country, *Economica*, 41, pp. 176-193.
- Caves, R. (1974, 1996) *Multinational enterprise and economic analysis*, Cambridge UP.
- Caves, R. and T.J. Lee (1997) *Uncertain Outcomes of Foreign Investment: Determinants of the Dispersion of Profits After Large Acquisitions*, November. (<http://post.economic.harvard.edu/facutly/caves/papers.html>)
- Chung, W., W. Mitchell and B. Yeung (1996) *Foreign Direct Investment and Host Country Productivity: The Case of the American Automotive Components Industry*, manuscript, University of Michigan, School of Business Administration.
- Cohen, B.I. (1973) Comparative Behavior of Foreign and Domestic Export Firms in a Developing Economy, *Review of Economics and Statistics*, Vol. 55, pp. 190-197.
- Cohen, W. and D.A. Levinthal (1990) Absorptive Capacity: A New Perspective on Learning and Innovation, *Administrative Science Quarterly* 35, 1990, pp. 128-152.
- Cousineau, J.-M., R. Lacroix, and D. Vachon (1989) *Foreign Ownership and Strike Activity in Canada*, Working Paper Nr. 8927, Department of Economics, University of Montreal.
- Creigh, S.W. and P. Makeham (1978) Foreign Ownership and Strike-Proneness: A Research Note, *British Journal of Industrial Relations*, Vol. 16, pp. 369-372.
- Davies, S.W. and B.R. Lyons (1991) Characterising Relative Performance: The Productivity Advantage of Foreign Owned Firms in the UK, *Oxford Economic Papers*, Vol. 43, pp. 584-595.
- Davies, S.W. and B.R. Lyons (1997) *The Industrial Organization of Multinational Enterprise*, Blackwell.
- Dickerson, A.P., Gibson, H.D. and Tsakalotos, E. (1997) The Impact of Acquisitions on Company Performance: Evidence from a Large Panel of UK Firms, *Oxford Economic Papers*, No. 49, pp. 344-361.

- Diewert, I. and Nakamura, A. (1998) A survey of empirical methods of productivity measurement and analysis, in: Blundell, R., Heckman, J. and Leamer, E. (eds) *Handbook of Econometrics*, Amsterdam: North-Holland.
- Doms, M.E. and J.B. Jensen (1998) Comparing Wages, Skills, and Productivity between Domestically and Foreign-Owned Manufacturing Establishments in the United States in: Baldwin, R.E., R.E. Lipsey, and J.D. Richardson (eds) *Geography and Ownership as Bases for Economic Accounting*, Studies in Income and Wealth, Vol. 59, pp. 235-255.
- Driffield, N. and Munday, M. (1998) The Impact of Foreign Direct Investment on UK Manufacturing: Is there a Profit Squeeze in Domestic Firms? *Applied Economics*, 30, pp. 705-709.
- Dunning, J.H. (1999) *Globalization and the Theory of MNE Activity*, Discussion Papers in International Investment and Management, University of Reading, No. 264, Series B, Vol. XI.
- Egger, Peter, Pfaffermayr, M., Wolfmayr-Schnitzer, Y. (2000) *The International Fragmentation of the Value Added Chain: The Effects of Outsourcing to Eastern Europe on Productivity, Employment and Wages in Austrian Manufacturing*, WIFO, Vienna.
- Feliciano, Zadia and Robert E. Lipsey (1999) *Foreign Ownership and Wages in the United States, 1987-1992*, NBER Working Paper 6932, Cambridge.
- Fors, G. (1997) Utilization of R&D Results in the Home and Foreign Plants of Multinationals, *The Journal of Industrial Economics*, June, Vol. XLV, No. 2, pp. 341-358.
- Globerman, Steven, John C. Ries and Ilan Vertinsky (1994) The economic performance of foreign affiliates in Canada, *Canadian Journal of Economics*, Vol. XXVII, No. 1, pp. 143-156.
- Gomes, L. and Ramaswamy, K. (1999) An Empirical Examination of the Form of Relationship Between Multinationality and Performance, *Journal of International Business Studies*, Vol. 30, No. 1, First Quarter, pp. 173-188.
- Greenaway, D., Hine, R. and Wright, P. (2000) Further Evidence on the Effect of Foreign Competition on Industry Level Wages, *Review of World Economics*, Vol. 136, Nr. 3, pp. 522-538.
- Greer, C.R. and J.C. Shearer (1981) Do Foreign-Owned Firms Practice Unconventional Labor Relations? *Monthly Labor Review*, Jg. 104, pp. 44-48.
- Griffith, R. (1999a) Productivity and Foreign Ownership in the UK Car Industry, *The Institute for Fiscal Studies, Working Paper Series No. W99/11*.
- Griffith, R. (1999b) Using the ARD establishment level data to look at foreign ownership and productivity in the United Kingdom, *The Economic Journal*, 109 (June), F416-F442.
- Griffith, R. and H. Simpson (2000) *Characteristics of foreign-owned firms in British manufacturing*, Institute for Fiscal Studies, December, mimeo. (download <http://www.nber.org/books/bcf/manufacturing12-6-00.pdf>)

- Gugler, K. (1998) Corporate Ownership Structure in Austria, *Empirica*, Vol. 25, No. 3, pp. 285-307.
- Haddad, M. and A. Harrison (1993) Are there positive spillovers from direct foreign investment? *Journal of Development Economics*, 42, pp. 51-74.
- Hall, R. and Jones, C. (1999) Why do some countries produce so much more output per worker than others, *Quarterly Journal of Economics*, Vol. CXIV, pp. 83-116.
- Hanson, G.J. (2001) *Should Countries Promote Foreign Direct Investment?* G-24 Discussion Paper Series, No. 9, February.
- Harris, R.I.D. (1999) Foreign Ownership and Productivity in the United Kingdom - Some Issues When Using the ARD Establishment Level Data, (revised for publication in: *Scottish Journal of Political Economy*).
- Harris, R.I.D. and C. Robinson (2001a) *Foreign Ownership and Productivity in the United Kingdom*, mimeo.
- Harris, R.I.D. and Robinson, C. (2001b) The Impact of Foreign Acquisitions on Total Factor Productivity (revised for publication in: *Review of Economics and Statistics*).
- Head, K. (1998) Comment, in: Baldwin, R.E., R.E. Lipsey, and J.D. Richardson (eds) *Geography and Ownership as Bases for Economic Accounting*, Studies in Income and Wealth, Vol. 59, pp. 255-258.
- Howenstine, N.G. and W.J. Zeile (1992) Foreign Direct Investment in the United States: Establishment Data for 1987, *Survey of Current Business*, October, pp. 44-58.
- Kearns, A. and F. Ruane (1999) The tangible contribution of R&D spending of foreign-owned plants to a host region: a plant level study of the Irish Manufacturing sector (1980-1996), *Trinity Economic Papers*, No. 99/7, Dublin, Ireland.
- Keay, I. (2000) Canadian manufacturers' relative productivity performance, 1907-1990, *Canadian Journal of Economics*, Vol. 33, No. 4, pp. 1049-1068.
- Keller, W. (2000) Do Trade Patterns and Technology Flows Affect Productivity Growth? *The World Bank Economic Review*, Vol. 14, No. 1, pp. 17-47.
- Koutsoyiannis, A. (1982) *Non-price decisions: The Firm in a Modern Context*, Macmillan: London.
- Kumar, M.S. (1984) Comparative Analysis of UK Domestic and International Firms, *Journal of Economic Studies*, Vol. 11, No. 3, pp. 26-42.
- Kumar, N. (1990) Mobility Barriers and Profitability of Multinational and Local Enterprises in Indian Manufacturing, *The Journal of Industrial Economics*, Vol. XXXVIII, No. 4, pp. 449-463.
- LaPorta, R., Lopez-de-Silanes, F. and A. Shleifer (1999) Corporate Ownership Around the World, *The Journal of Finance*, Vol. LIV, No. 2, pp. 471-517.
- Li, J. and Guisinger, S. (1991) Comparative Business Failure of Foreign-Controlled Firms in the United States, *Journal of International Business Studies*, 2nd Quarter, pp. 209-224.

- Lichtenberg, F.R. and Siegel, D. (1987) Productivity and Changes in Ownership of Manufacturing Plants, *Brookings Papers on Economic Activity: Microeconomics*, pp. 643-673.
- Little, J.S. (1981) The Financial Health of U.S. Manufacturing Firms Acquired by Foreigners, *New England Economic Review*, July-August, pp. 5-18.
- Lyons, B. (1987) Strategic Behaviour by Firms, in: Clarke, R. and T. McGuinness (eds) *The Economics of the Firm*, Basil Blackwell: Oxford.
- Maliranta, M. (1997) Plant Productivity in Finnish Manufacturing, *ETLA Discussion Papers*, No. 612, Helsinki.
- Markusen J. R. (1995) The Boundaries of Multinational Enterprises and the Theory of International Trade, *Journal of Economic Perspectives*, Vol. 9, No. 2, Spring, pp. 169-189.
- Mata, J. and Portugal, P. (2000) *Patterns of Entry, Post-Entry Growth and Survival: A Comparison Between Domestic and Foreign Owned Firms*, Lisboa, mimeo.
- Matalony, R.J. (2000) An Examination of the Low Rates of Return of Foreign-Owned U.S. Companies, *Survey of Current Business*, March, pp. 55-73.
- McGuckin, R.H. and S.V. Nguyen (1995) On productivity and plant ownership change: new evidence from the Longitudinal Research Database, *RAND Journal of Economics*, Vol. 26, No. 2, Summer, pp. 257-276.
- McGuckin, R.H., S.V. Nguyen and A.P. Reznick (1995) *The Impact of Ownership Change on Employment, Wages and Labour Productivity in US Manufacturing 1977-1987*, Working Paper, Center for Economic Studies, US Bureau of Census, CES 95-98.
- McGuckin, R.H., S.V. Nguyen (2000) *The Impact of Ownership Changes: A View from Labor Markets*, Working Paper, Center for Economic Studies, US Bureau of Census CES WP00-02.
- Moden, K.-M. (1998) *Foreign acquisitions of Swedish companies: Effects on R&D and Productivity*, mimeographed, IUI: Stockholm.
- Nelson, R. (1991) Why Do Firms Differ, and How Does It Matter?, *Strategic Management Journal*, Vol. 14, pp. 61-74.
- Nickell, S.J. (1996) Competition and Corporate Performance, *Journal of Political Economy*, Vol. 104, No. 4, pp. 724-746.
- Oulton, N. (1998a) Investment, Capital and Foreign Ownership in UK Manufacturing, *NIESR Discussion Paper*, No. 141, August.
- Oulton, N. (1998b) Labour Productivity and Foreign Ownership, *NIESR Discussion Paper*, No. 143, September.
- Pfaffermayr, M. (1999) Ownership Advantages, Foreign Production and Productivity: Evidence from Austrian Manufacturing Firms, *Review of Industrial Organization*, 15, pp. 379-396.

Pratten, C.F. (1976) *Labour productivity differentials within international companies*, Occasional papers, No. 50, University of Cambridge, Department of Applied Economics, Cambridge.

Willmore, L. (1986) The Comparative Performance of Foreign and Domestic Firms in Brazil, *World Development*, 14(4), pp. 489-502.

Ylä-Anttila, P. und Ali-Yrkkö, J. (1997) Foreign owners set their sights higher than local ones, *Unitas* 2, pp. 14-19.